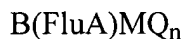


ABSTRACT

[0066] Catalyst compositions and processes for the polymerization of ethylenically unsaturated monomers to produce polymers specific to the polymerization of propylene to produce isotactic polypropylene and copolymer, specifically an ethylene-propylene copolymer. An olefin polymerization catalyst is characterized by the formula:



wherein Flu is a fluorenyl group substituted at the 4(5) position by a bulky hydrocarbyl group having at least 3 carbon atoms, A is a substituted or unsubstituted cyclopentadienyl or indenyl group or a heteroorgano group, XR, in which X is a heteroatom from Group 15 or 16 such as nitrogen. R is an alkyl group or cycloalkyl group or a mononuclear aromatic group which may be substituted or unsubstituted. B is a structural bridge which imparts stereorigidity to the ligand structure. The bridge B is characterized by the formula ER'R'', in which E is a carbon, silicon or germanium atom, and R' and R'' are each independently an alkyl group, an aromatic group or a cycloalkyl group. M is a Group 4 or Group 5 transition metal such as titanium, zirconium or hafnium. Q is chlorine, bromine, iodine, an alkyl group, an amino group or an aromatic group. n is 1 or 2. The fluorenyl group may be substituted at both of the 4 or 5 positions with a bulky hydrocarbyl group containing at least 3 carbon atoms. A may take the form of an indenyl group which is substituted or unsubstituted, or a cyclopentadienyl group which is substituted at the 3 or the 3 and 5 positions. The fluorenyl group may be mono-substituted at the 4 (or 5) position and is otherwise unsubstituted or is di-substituted at the 2,7 positions with alkyl or phenyl or substituted phenyl groups.